

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A speech recognition device, comprising:

an input unit that inputs ~~input means for inputting~~ a digital sound signal;

a sound detector that detects the starting point of the digital sound signal in a sound period
input by said input unit;

a sound level estimator that estimates the sound level of said sound period based on the
digital sound signal in a prescribed time period at the beginning of said sound period input by said
input unit;

a sound level adjuster that adjusts the level of the digital sound signal in said sound period
input by said input unit based on the sound level estimated by said sound level estimator and a preset
target level;

~~and a~~ a speech recognition unit that performs ~~recognition means for performing~~ speech
recognition based on the digital sound signal adjusted by said sound level ~~adjusting means~~ adjuster;

a hold circuit that holds the sound level estimated by said sound level estimator; and

a storing circuit that stores the digital sound signal in said sound period input by said input
unit in response to the detection by said sound detector and outputs the stored digital sound signal

in said sound period to said sound level adjuster in synchronization with the sound level held in said hold circuit.

Claim 2 (canceled).

Claim 3 (Currently Amended): The speech recognition device according to claim [[2]]
1, wherein

said sound level ~~estimation means~~ estimator estimates the average value of the digital sound signal in the prescribed time period at the beginning of said sound period input by said input [[means]] unit as the sound level of said sound period.

Claim 4 (Currently Amended): The speech recognition device according to claim 1,
wherein,

said sound level ~~adjusting means~~ adjuster amplifies or attenuates the level of the digital sound signal in said sound period input by said input [[means]] unit by an amplification factor determined by the ratio between said preset target level and the sound level estimated by said sound level ~~estimation means~~ estimator.

Claim 5 (Currently Amended): The speech recognition device according to claim 1, further comprising a delay circuit that delays the digital sound signal input by said input [[means]] unit so that the digital sound signal in said sound period is applied to said sound level ~~adjusting means~~ adjuster together and in synchronization with the sound level estimated by the sound level ~~estimation means~~ estimator.

Claim 6 (canceled).

Claim 7 (Currently Amended): The speech recognition device according to claim [[6]] 1, wherein

said storing circuit includes first and second buffers that alternately store the digital sound signal in said sound period input by the input [[means]] unit and alternately outputting the stored digital sound signal in said sound period to said sound level ~~adjusting means~~ adjuster.

Claim 8 (Currently Amended): The speech recognition device according to claim 1, wherein
said speech recognition [[means]] unit has a result of speech recognition fed back to said sound level ~~adjusting means~~ adjuster, and

said sound level ~~adjusting means~~ adjuster changes the degree of adjusting said sound level based on the result of speech recognition fed back from said speech recognition ~~[[means]]~~ unit.

Claim 9 (Currently Amended): The speech recognition device according to claim 8, wherein said sound level ~~adjusting means~~ adjuster increases the amplification factor for said sound level when speech recognition by said speech recognition ~~[[means]]~~ unit is not possible.

Claim 10 (Currently Amended): The speech recognition device according to claim 1, further comprising a non-linear processor that inactivates said sound level ~~adjusting means~~ adjuster when the sound level estimated by said sound level ~~estimation means~~ estimator is within a predetermined range, activates said sound level ~~adjusting means~~ adjuster when the sound level estimated by said sound level ~~estimation means~~ estimator is not in the predetermined range, and changes the sound level estimated by said sound level ~~estimation means~~ estimator to a sound level within the predetermined range for application to said sound level ~~adjusting means~~ adjuster.

Claim 11 (Currently Amended): A speech recognition method, comprising the steps of:
inputting a digital sound signal;
detecting the starting point of the digital sound signal in a sound period;
estimating the sound level of said sound period based on the digital sound signal in a
prescribed time period at the beginning of said sound period;

holding said estimated sound level;
storing the digital sound signal in said sound period in response to the detection of the
starting point of said digital sound signal and outputting said stored digital sound signal in said sound
period in synchronization with said held sound level;
~~estimating the sound level of a sound period based on said input digital sound signal in a part~~
~~of the sound period;~~
adjusting the level of ~~[[the]]~~ said output digital sound signal in said sound period based on
said ~~estimated~~ held sound level and a preset target level; and
performing speech recognition based on said adjusted digital sound signal.

Claim 12 (canceled).

Claim 13 (Currently Amended): The speech recognition method according to claim ~~[[12]]~~
11, wherein

said step of estimating the sound level includes estimating the average value of the digital
sound signal in the prescribed time period at the beginning of said sound period as the sound level
of said sound period.

Claim 14 (Currently Amended): The speech recognition method according to claim 11,
wherein

said step of adjusting the level of said digital sound signal includes amplifying or attenuating the level of the digital sound signal in said sound period by an amplification factor determined by the ratio between said preset target level and said ~~estimated~~ held sound level.

Claim 15 (Currently Amended): The speech recognition method according to claim 11, further comprising the step of delaying the digital sound signal so that said digital sound signal in said sound period is applied together and in synchronization with said ~~estimated~~ held sound level to the step of adjusting ~~[[the]]~~ said output level of said digital sound signal.

Claim 16 (Canceled).

Claim 17 (Currently Amended): The speech recognition method according to claim ~~[[16]]~~ 11, wherein

said step of storing ~~[[step]]~~ includes the step of storing the digital sound signal in said sound period alternately to first and second buffers and outputting the stored digital sound signal in said sound period alternately from the first and second buffers.

Claim 18 (Original): The speech recognition method according to claim 11, wherein
said step of performing speech recognition includes the step of feeding back a result of speech recognition during said step of adjusting the level of the digital sound signal, and

said step of adjusting the level of the digital sound signal comprises changing the degree of adjusting said sound level based on said fed back result of speech recognition.

Claim 19 (Original): The speech recognition method according to claim 18, wherein said step of adjusting the level of the digital sound signal comprises increasing the amplification factor for said sound level when said speech recognition is not possible.

Claim 20 (Original): The speech recognition method according to claim 11, further comprising the step of inactivating the step of adjusting the level of the digital sound signal when said estimated sound level is within a predetermined range, while activating said adjusting step when said estimated sound level is not in the predetermined range, and changing said estimated sound level to a sound level within said predetermined range for use in adjusting the level of said digital sound signal.

Claim 21 (Currently Amended): A computer-readable speech recognition program enabling a computer to execute the steps of:

inputting a digital sound signal;
~~estimating the sound level of a sound period based on the input digital sound signal in a part of said sound period;~~
detecting the starting point of the digital sound signal in a sound period;

estimating the sound level of said sound period based on the digital sound signal in a prescribed time period at the beginning of said sound period;

holding said estimated sound level;

storing the digital sound signal in said sound period in response to the detection of the starting point of said digital sound signal and outputting said stored digital sound signal in said sound period in synchronization with said held sound level;

adjusting the level of said ~~[[input]]~~ output digital sound signal in said sound period based on said ~~estimated~~ held sound level and a preset target level; and

performing speech recognition based on said adjusted digital sound signal.